A Lexical Approach to Inalienable Possession Constructions in Korean

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0. Introduction

The Inalienable Possession construction (IAP hereafter), shown in (1) and (2) below, is one of the most controversial topics in Korean syntax. This construction owes its name to the fact that there is an inalienable body-part relationship between the two accusative NPs: e.g. *John-lul* is the Possessor NP (PS NP hereafter) and *son-lul* is the Body Part NP (BP NP hereafter) in (1). One of the special characteristics of Korean IAP which distinguishes it from similar constructions in other languages such as French (Gueron 1985), Chinese (Li 1990), or English (Massam 1989) is that in Korean, an arbitrary number of BP NPs can appear in a clause as illustrated in (2), as long as certain semantic constraints are observed. (See section 3.1 for a detailed discussion of these semantic constraints.)

(1) Mary-ka John-lul son-lul capassta.
M-nom J-acc hand-acc held
'Mary held John's hand.'

(2) Mary-ka ku namwu-lul kaci-lul kkut-lul callassta.
M-nom the tree-acc branch-acc end-acc cut
'Lit. Mary cut the end of the branch of the tree.'

Various analyses attempting to explain IAP have been suggested: e.g. Chun (1986), Kang (1987), Yoon (1989), Y. Kim (1991), Lee (1992), and O'Grady (1991), among others. All of these analyses either use a certain configuration to allow a recursion of the BP NP, or assume more than one level of syntactic representation to explain various properties of the construction, but none of these analyses capture all of its properties. The

purpose of this paper is to show how the previous analyses are problematic and to propose a totally different and more promising analysis in the framework of Head-driven Phrase Structure Grammar (Pollard & Sag (in press), HPSG hereafter). The organization of this paper is as follows. In section 1, various properties of IAP are discussed; in section 2, three different types of current views about IAP are reviewed, and it is shown how all of them are problematic; in section 3, a lexical analysis is suggested in the HPSG framework, and it is shown how all the properties mentioned in section 1 are explained by this approach; section 4 is the summary of this paper.

1. The Properties of IAP

1.1. Relation of inalienable possession

As mentioned above, the PS NP and BP NP stand in a relation of inalienable possession. Sentence (3) is bad because *chayk* ('book') is not an inalienable body part of *John*.

(3) #Mary-ka John-lul chayk-lul ccicessta.
M-nom J-acc book-acc tore
'Mary tore John's book.'

On my analysis, this inalienable possession relation is considered to be a presupposition. Thus, (3) is infelicitous rather than ungrammatical, since the relevant convention is not observed. See section 3.1 for more discussion on this.

1.2. Complementhood of the BP NP

Y.S. Kang (1986) argues that only the PS NP is subcategorized by the verb since the PS NP alone can be passivized, while the BP NP cannot. However, I will show that the BP NP can also be passivized when the PS NP is passivized (See property 1.6, and section 2.1

below for passivization in IAP.), which strongly suggests that a BP NP is a complement too.

Maling & Kim (1992) also argue that the BP NP is subcategorized for by the verb since the existence of a BP NP is crucial for the well-formedness of a sentence in some cases, such as (4).

(4) a. #Mary-ka talk-lul ppopassta.
M-nom hen-acc pulled-out
'Mary pulled out a hen'

b. Mary-ka talk-lul thel-lul ppopassta.
M-nom hen-acc feather-acc pulled-out
'Mary pulled out the hen's feathers.
(Mary plucked the hen.)'

However, this is not compelling evidence for the complementhood of the BP NP because the awkwardness of a sentence like (4a) can be accounted for on the basis of pragmatic considerations. For example, in a context in which half of a hen's body is buried in the ground, the sentence like (4a) is perfectly grammatical.

1.3. Linear precedence between the PS NP and BP NP

It is widely believed that a PS NP always precedes a BP NP. (Yoon (1989), O'Grady (1991)) However, the BP NP can precede the PS NP when the PS NP is focussed: (Here the capital letters represent that the word has a pitch accent.)

(5) a. A: Mary-ka nwuku-lul son-lul capass-ni?
M-nom who-acc hand-acc held-Q
'Whose hand did Mary hold?'

b. B: Mary-ka son-lul JOHN-lul capassta.
M-nom hand-acc John-acc held
'Mary held John's hand.'

This shows that the canonical word order in IAP (i.e. the whole precedes the part) is a sort of default word order in Korean, and

this word order can be overridden by other factors such as a focus on the PS NP.[1]

1.4. Modification of the BP NP

A BP NP cannot always be modified by an adjective or quantifier. (Yoon (1989), O'Grady (1991), etc.) However, the BP NP can be modified when the adjective or quantifier restricts or narrows down the choice of the body parts as illustrated in (6) and (7):[2]

(6) ?? Mary-ka mwune-lul kin/motun tali-lul callassta.
M-nom octopus-acc long/every leg-acc cut
'Mary cut the long/every leg of the octopus.'

(7) Mary-ka Kim-lul olun/ tachin/ ku son-lul capassta.
M-nom K-nom right/injured/the hand-acc held
'Lit. Mary held Kim's right/injured/the hand.'

In (6), the adjective *kin* ('long') does not restrict the choice of leg since all of the octopus legs are long, and the determiner *motun* ('all'), because of its meaning, cannot restrict the choice either. In contrast, the adjectives and determiner in (7) restrict the choice of hand, and (7) is grammatical.

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[1]This LP statement seems to have countexamples: when the PS NP and BP NP are subjects bearing nominative case, the order can be reversed as illustrated in (ib):

(i) a. Khokkili-ka kho-ka kilta.
elephant-nom nose-nom be-long
'As for the elephant, its nose is long.'

b. Kho-ka khokkili-ka kilta.
nose-nom elephant-nom be-long
'As for the nose, elephant has a long one.'

I do not have a good account for this. However, if we assume *kho-ka* in (ib) to be a topic with nominative case, then (ib) is no longer a counterexample.

[2]Y. Kim (1991) also points out that the difference depends on the nature of the modifiers: a BP NP takes only restrictive modifiers, but no appositive modifiers.

1.5. Physical affectedness

Verbs which describe a physical effect on the PS NP are preferable to verbs which do not (Yoon (1989), Cho (1992)) as shown in (8). In (8b), the fact that the action of the verb *poassta* ('saw') does not physically affect the PS NP *John* is given responsibility for its awkwardness.

(8) a. Mary-ka John-lul ppyam-lul ttaylyessta.
M-nom J-acc cheek-acc hit
'Mary hit John's cheek.'

b. #Mary-ka John-lul son-lul poassta.
M-nom J-acc hand-acc saw
'Mary saw John's hand.'

However, physical affectedness is not an absolute condition on IAP in Korean since, even though a sentence like (8b) is awkward for many speakers, (9) is much better, notwithstanding the fact that the action of seeing does not physically affect *John*.

(9) Mary-ka John-lul elkul-lul poassta.
M-nom J-acc face-acc saw
'Mary saw John's face.'

I will suggest that the difference in acceptability between (8b) and (9) is related to the semantic entailments associated with the lexical semantics of the verb with respect to the "involvement" of both the BP and PS NPs, rather than physical affectedness. For example, in (8a), we can say that every situation that makes "Mary hit John's cheek" true makes "Mary hit John" true (i.e. "Mary hit John's cheek" entails "Mary hit John"), and this satisfaction of the entailment relationship may make (8a) good. In contrast, in (8b), "Mary saw John's hand" does not entail "Mary saw John" since we can see only a person's hand without noticing whose hand it is, and this is the reason why (8b) is bad. According to this line of

reasoning, (9) is better than (8b): the entailment holds in (9) because seeing a person's face usually qualifies as seeing the person. (See section 3.1 for more detailed discussion.)

1.6. Passivization

The BP NP alone cannot be passivized (Kang (1987), Yoon (1989), O'Grady (1991)), as shown in (10):

(10) a. *Son-i John-lul caphiessta.
hand-nom J-acc be-caught
'John's hand is caught.'

b. *John-lul son-i caphiessta.
J-acc hand-nom be-caught
'John's hand is caught.'

However, the BP NP can be passivized when the PS NP is passivized as illustrated in (11).

(11) a. John-i son-lul cap-hi-essta.
J-nom hand-acc be-caught
'John's hand is caught.'

b. John-i son-i cap-hi-essta.
J-nom hand-nom be-caught
'John's hand is caught.'

c. Ce namwu-ka kaci-ka/lul kkut-i/lul cal-i-essta.
that tree-nom branch-nom/acc end-nom/acc be-cut
'Lit. The end of the branch of that tree was cut.'

(11c) shows that when more than one BP NP appear, any one of them can be passivized as long as its PS NP is passivized. Four different case combinations of the two BP NPs are possible in (11c): even a sentence like Ce *namwu-ka kaci-lul kkut-i cal-i-essta* is acceptible, where nominative ("passivized") NPs do not have to form a continuous string. In section 3.2, I show how this strange-looking passivization can be explained in a simple fashion by my

analysis of IAP.

If, as Y.S. Kang (1986) assumes, only a complement can be passivized, the fact that the BP NP undergoes passivization argues strongly that it is a complement too. In contrast, a "real" adjunct-like accusative NP (e.g. a durative or locative NP) cannot be passivized as shown in section 2.1 below.

1.7. Lack of topicalizability of the BP NP

The BP NP cannot be topicalized without a contrastive reading. (Yoon (1989), O'Grady (1991), G, Kim (1986), Chun (1986))

(12) a. ??kaci-nun Mary-ka ku namwu-lul calassta.
branch-top M-nom the tree-acc cut
'As for branches, Mary cut the one belonging to the tree.'

b. Ku namwu-nun Mary-ka kaci-lul calassta.
the tree-top M-nom branch-acc cut
'As for the tree, Mary cut its branch.'

(12a) is good in the following contrastive situation: Mary cut a branch of an apple tree, and Sam cut a root of an orange tree. However, it is almost impossible to get an ordinary topic reading. That is, it is bad in the following situation: Mary cut a branch of an apple tree and Sam pulled out weeds around the tree. This lack of topicalizability of the BP NP without a contrastive reading is explained in section 3.2 by the same mechanism responsible for the ungrammaticality of (10).

1.8. Lack of relativizability of the BP NP

The BP NP cannot be relativized. (Yoon (1989), O'Grady (1991))

(13) a. *Mary-ka John-lul capun son
M-nom J-acc hold-MOD hand
'John's hand that Mary is holding.'

b. Mary-ka son-lul capun John
M-nom hand-acc hold-MOD J
'Lit. John$_i$ who Mary holds his$_i$ hand=John whose hand is being held by Mary'

On my analysis, this lack of relativizabilty of the BP NP correlates with the lack of topicalizabilty mentioned above, and the ungrammaticality of (13a) immediately falls out from the explanation of the ungrammaticality of (12a).

1.9. Scrambling

Other arguments of the verb such as the subject, an adverbial expression, or the causee of a causative construction can intervene between a PS NP and its BP NP.

(14) John-lul Mary-ka son-lul capassta.
J-acc M-nom hand-acc held
'Mary held John's hand.'

(15) a. Mary-ka John-eykey ku namwu-lul kaci-lul
M-nom J-dat the tree-acc branch-acc

chikey-haeyssta.
cut-caused

'Mary made John cut the branch of the tree.'

b. Mary-ka ku namwu-lul John-eykey kaci-lul
M-nom the tree-acc J-dat branch-acc

chikey-haeyssta.
cut-caused

'Mary made John cut the branch of the tree.'

(16) Mary-ka John-lul kapccaki ppyam-lul ttaylyessta.
M-nom J-acc suddenly cheek-lul hit
'Mary hit John's cheek all of a sudden.'

On my analysis, this scrambling phenomenon will be explained without the movement posited in GB since I assume that subject,

causee and complements are sisters to the head verb: a sentence in Korean has a flat structure, and IAP is no exception.[3] (See Chung (1993) for arguments for the flat structure analysis of Korean sentences.) Therefore, the word orders shown above are instances of general scrambling among sisters.

2. Current Views and Their Problems

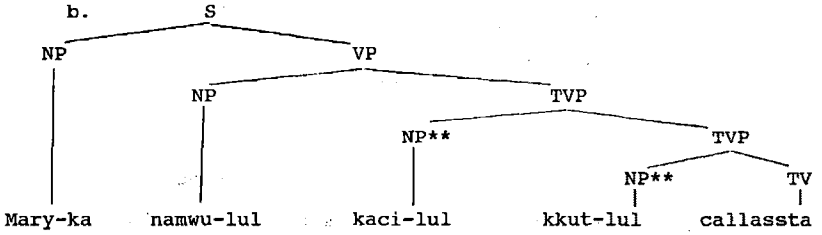
In this section, three different types of analyses of IAP are reviewed critically: the adjunct analysis of O'Grady (1991), the V' analysis of Yoon (1989), and the incorporation analysis of M. Y. Kang (1987).

2.1. O'Grady (1991)

O'Grady (1991) suggests that a BP NP is an adjunct modifying any kind of verbal expression: e.g. a transitive verb, transitive VP, intransitive verb, or intransitive VP. He uses NP** to represent this category.

(17) a. Mary-ka namwu-lul kaci-lul kkut-lul callassta.
M-nom tree-acc branch-acc end-acc cut
'Lit. Mary cut the end of the branch of the tree.'

b.



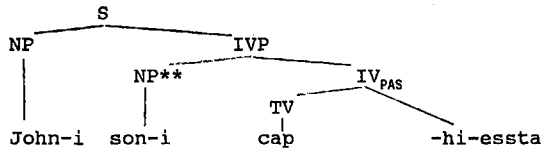
He argues that the the adjuncthood of the BP NP is supported by the

[3] In this approach, an adverbial as in (16) is also a sister of V. See footnote 10 in section 3.1 for more discussion on this.

fact that a BP NP cannot be topicalized or relativized.

Even though O'Grady's analysis might explain the lack of topicalizability and relativizability of the BP NP, given the assumption that only arguments can be topicalized or relativized, his analysis has some drawbacks. According to his account, (11a) is analyzed as shown in (18):

(18)



Here the BP NP *son-i* has undergone passivization. It is just an adjunct which modifies an IVP containing the passive morpheme and gets nominative case from the IVP. One problem with this analysis is that if the BP NP is an adjunct, it is hard to explain the difference between BP NPs and real adjuncts such as locative NPs or durative NPs. As illustrated in (19), a locative or durative NP (*piskil* in (19b) or *hansikan* in (19d)) cannot be passivized (and cannot modify an IVP containing a passive morpheme in O'Grady's terms), while a BP NP can, as shown above. This difference suggests that the grammatical status of a BP NP is different from that of a real adjunct NP. If we regard a BP NP as a complement, however, this problem does not arise, since it is generally assumed that only complements can be passivized.

(19) a. Mary-ka piskil-lul cha-lul kwasok-ulo
M-nom rainy-road-acc car-acc over-the-speed-limit

molassta.
drove (Y.S. Kang (1992))

'Mary drove a car over the speed limit on the rainy road.'

b. *Piskil-i cha-ka kwasok-ulo
rainy-road-nom car-nom over-the-speed-limit

mola-ci-essta
was-driven

'A car was driven over the speed limit on the rainy road.'

c. Mary-ka ku kkoma-lul hansikan-lul tolpoacuessta.
M-nom the kid-acc one-hour-acc took-care-of
'Mary took care of the kid for an hour.'

d. ??*Ku kkoma-ka hansikan-i tolpoa-ci-essta.
the kid-nom one-hour-nom was-taken-care-of
'The kid was taken care of for one hour.'

Another piece of evidence that the BP NP is not a real adjunct is as follows. In Korean, when the auxiliary emotional verb *-sip* ('want to') is attached to a transitive verb which takes an accusative NP as its complement, the case of the complement can be changed to nominative. The accusative BP NP in IAP can also be changed to nominative when the verb occurs with *-sip* as shown in (20a), while changing the case of a durative adjunct in the same environment yields only marginal grammaticality as shown in (20b).[4] This difference also suggests that BP NPs are not real adjuncts.

(20) a. Mary-ka ku namwu-lul kaci-lul/ka caluko-sip-essta.
M-nom the tree-acc branch-acc/-nom want-to-cut
'Mary wanted to cut the branch of the tree.'

b. Mary-ka ku chayk-lul ilcuil-lul/??-i
M-nom the book-acc one-week-acc/-nom

piliko-sip-essta.
wanted-to-borrow

'Mary wanted to borrow the book for one week.'

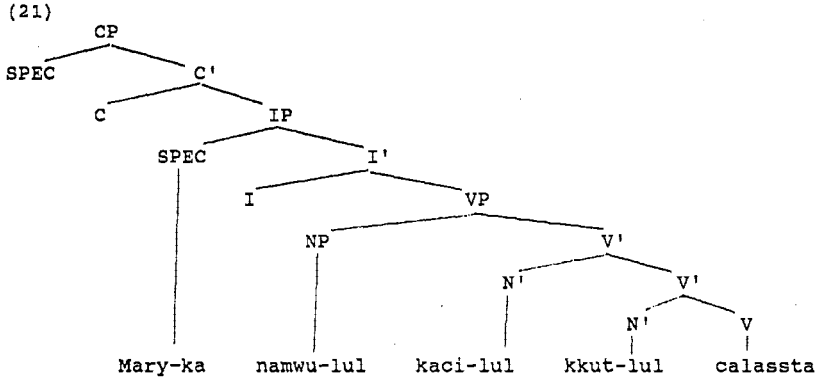
[4](20b) with the nominative may be allowed only when the durative NP has a contrastive reading.

Also note that if the BP NP is not a real adjunct, then O'Grady's assumption that the lack of topicalizability or relativizabilty of the BP NP comes from the adjuncthood of the BP NP is untenable, and we would need a different explanation for these properties of the BP NP.

2.2. Yoon (1989)

Yoon (1989) gives another analysis of Korean IAP based on Government and Binding Theory. As shown in (21), the BP NP, which he analyzes as an N', is a sister of V'. This allows the iterative occurrence of BP NPs.[5] (21) is Yoon's analysis of the sentence in (17).

(21)



The reason why he assumes that BP NPs are N's in Korean is to explain their lack of modifiability and their immobility (lack of topicalizability and relativizability). However, as (7) in section 1.4 shows, a BP NP actually can be modified by adjectives or

[5]In (21), it seems odd that only one BP NP (*kkut-lul*) is sister to V, while the other is sister to V' (Carl Pollard (p.c.)). Yoon does not give any explanation for this asymmetry.

determiners if they narrow down the choice of body part. Also the immobility of the BP NP cannot be explained on the grounds that the BP NP is an N', since then there would be no way to move the N' at all, and no way to explain the passivization and scrambling phenomena illustrated in (11), (14) and (15) in section 1.6 and 1.9. This is because passivization and scrambling result from movement of a lexical or maximal category in GB; but since an N' is neither, there is no straightforward way of deriving passivized sentences or scrambled word orders.

Even if we assume that the BP N' can somehow move in the case of scrambling (but not in other cases), the scrambling mechanism itself is problematic. In GB, an IP adunction rule (Saito 1985) is usually assumed to explain scrambling: roughly, an argument can be adjoined to IP, and the adjoined IP does not create a barrier, which allows other arguments to keep adjoining to IP. The problem with this mechanism is that this allows even a simple sentence like *Mary-ka John-lul salanghanta* ('Mary loves John') to be structurally ambiguous in an infinite number of ways: i.e. the S-structure of this simple sentence can be [Mary-ka [t John-lul salanghanta]], or [Mary-ka$_i$ [John-lul$_i$ [t$_i$ t$_j$ salanghanta]]], or [Mary-ka$_i$ [t$_i$ [John-lul$_j$ [t$_i$ t$_j$ salanghanta]]]], and so on. In other words, IP adjunction is too powerful, and it would be more desirable to deal with scrambling in a more restricted way.[6]

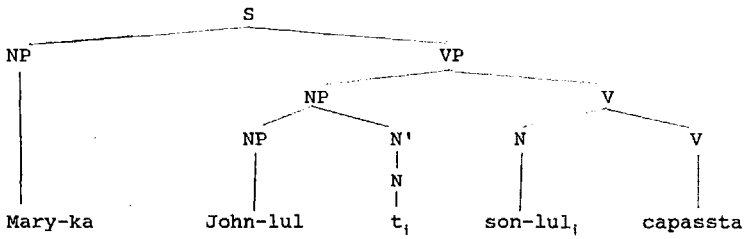
2.3. Kang (1987)

The last analysis that I want to review is that of M.Y.Kang (1987). One of the special characteristics of his analysis is that he treats BP NPs as lexical categories which are incorporated into the head verb by head-to-head movement in LF (the BP N is adjoined to a head verb). Thus a BP N becomes a part of a complex verb in LF on

[6]Peter Culicover (p.c.) points out that this kind of consecutive movements can be ruled out by the Minimalist Program in Chomsky (1992) via the Economy Principle.

his analysis, as illustrated in (22) (=(1)):

(22)



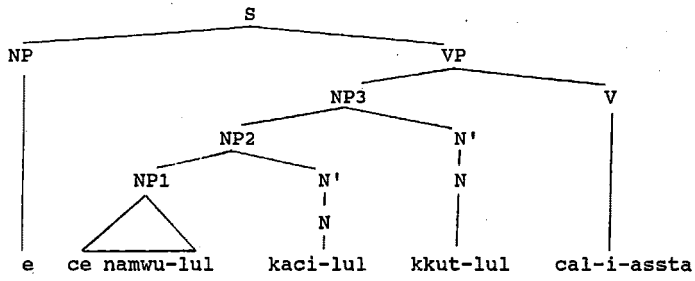
One problem here is that the BP N can be modified by certain adjectives and determiners as mentioned earlier. In this case the BP N must be an NP. Thus this analysis allows an NP modified by restrictive adjectives or determiners to be a part of a complex verb. But on standard GB assumptions, a lexical category moves only to a lexical category even in LF. If we follow Kang's analysis, we seem obliged to say that a BP NP, which is phrasal, is incorporated into a verb which is lexical, thereby violating the principle of structure preservation or "lexical integrity."

Another problem is passivization. Kang assumes that a BP NP cannot be passivized, but as mentioned in (11) in section 1.6, a BP NP can be passivized when its PS NP is passivized. The problematic case is a sentence like (23a), whose D-structure is (23b) on his analysis.[7]

(23) a. Ce namwu-ka kaci-lul kkut-i cal-i-essta.
that tree-nom branch-acc end-nom be-cut
'Lit. The end of the branch of that tree was cut.'

[7]Kang does not specifically discuss a structure of an IAP sentence with more than one BP NP such as (23a), but we can confidently infer the structure.

b.



On this analysis, NP1, NP2, or NP3 can be passivized, but Ns cannot because Ns are heads. Thus the problem is that it is not clear how only *ce namwu* and *kkut* are passivized into the subject position to get nominative case, leaving *kaci* in the object position.

3. A Lexical Approach to IAP

The problematic approaches to IAP discussed above can be regarded as configurational inasmuch as they depend on some sort of hierachical structure to capture the iterative occurrence of the BP NP and other properties of IAP. In this section, I claim that all the BP NPs are complements and appear as sisters of the head verb, rather than as sisters of VP or V'.

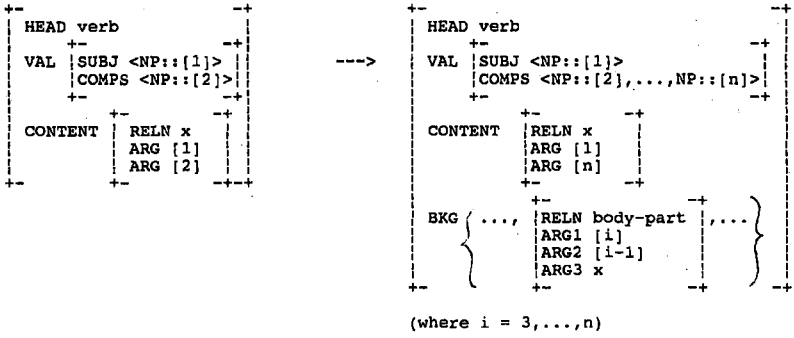
My approach is similar to that of Lee (1992) in that both the PS NP and BP NP are analyzed as complements of the verb. Yet it is different from his in that I do not posit VP or V' constituents, and all the PS NP and BP NP appear as sisters of the verb in a flat structure. As mentioned in section 2, some problems in Yoon's approach arise from the assumption of such VP or V' constituents in connection with scrambling phenomena. Moreover, as far as I know, there is no theory-external evidence for a VP constituent which is not subcategorized for by a verb in Korean (See Chung (1993)). Thus our analysis will not make use of such a constituent. Also note

that the category of the body part expression is NP (not N' or N) in our analysis, since a determiner or adjective that narrows down the choice of the body parts can actually modify the body part expression.

3.1. A Lexical Rule for IAP

I suggest the following HPSG-style lexical rule to describe the fact that the BP NP can be iterated an arbitrary number of times so long as the semantics is compatible with each PS-BP relation involved. (Here the tag after :: represents an NP's index, and x is a variable over the value of RELATION)

(24) Lexical Rule for IAP



As shown in the BACKGROUND (BKG) of the output lexical entry, the body-part relation is a three place predicate, and its arguments correspond to the PS NP, the BP NP, and the involved action: ARG1 and ARG2 are in an inalienable body-part relation with respect to the involved action ARG3, so that the inalienable possession relation is parameterized according to the verb's meaning. I also assume that the body-part relation is such that for all x, y, z, w,

the following entailment holds[8]:

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        +-                  -+     +-        -+          +-        -+
(25)    |RELN  body-part     |     |RELN   x  |          |RELN   x  |
        |ARG1  y             |  /\ |ARG1   w  |    ==>   |ARG1   w  |
        |ARG2  z             |     |ARG2   y  |          |ARG2   z  |
        |ARG3  x             |     +-        -+          +-        -+
        +-                  -+
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Roughly speaking, (24) and (25) say that a transitive verb which takes one NP complement can also take an arbitrary number of additional complements as long as all the background conditions are satisfied. The semantic entailment relationship mentioned in section 1.5 is embodied in (25).[9] For example, in a sentence like (1) (*Mary-ka John-lul son-lul capassta*. 'Mary held John's hand.'), x=hold, y=John's hand, z=John, and w=Mary. And the entailment relation is as follows: since John and John's hand are in a body-part relation with respect to the action of holding, then if Mary is holding John's hand, it follows that Mary is also holding John.

Also note that, as shown in the CONTENT (CONT) of the output lexical entry, the verb assigns a patient role (represented by ARG [n]) to only one of the BP NPs. We can infer from (25) that the semantic role of all other BP NPs is identical to that of the BP NP due to the fact that they are connected by a body-part relationship. Here, an arbitrary number of NPs can occur in this construction as long as each bears a body-part relationship with respect to another.

Now let's consider one example of the output lexical entry (26b) which is responsible for licensing (26a):

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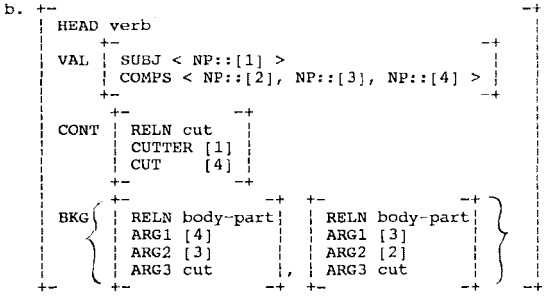
[8] In general the BACKGROUND value corresponds to presuppositions or conventional implicatures associated with an expression. The formulation of BACKGROUND in (24) and (25) is due to Carl Pollard (p.c.).

[9] (25) is not part of a lexical entry: it is just a nonlinguistic fact about the body-part relation.

(26) a. Mary-ka namwu-lul kaci-lul kkut-lul callassta.
M-nom tree-acc branch-acc end-acc cut
'Lit. Mary cut the end of the branch of a tree.'

b.



(26b) says that the verb *callassta* takes three NP objects: NP::[2] *namwu-lul*, NP::[3] *kaci-lul*, and NP::[4] *kkut-lul*; and that the NP::[4] bears the patient role of CUT, while the other objects are related to this index through the successive body-part relationships specified in the value of the BACKGROUND (BKG) attribute.

With the lexical rule in (24), and the Subject-Complements-Head Schema, which says that the subject and all the complements are the sisters of the head verb, we can give a flat structure analysis of the IAP, and this provides a more restricted way of explaining the scrambling phenomena illustrated in (5b), (14), (15), and (16). To capture scrambling, all we need to say is that an unfocussed PS NP precedes its BP NP, which allows the subject NP, the causee NP, or an adverbial to intervene between the PS NP and BP NP ((14), (15), and (16)),[10] and allows the focussed PS NP to appear after the BP NP ((5)).

[10]In this framework, an adverbial selects a verb as a "modifyee" via the MOD feature, and is a sister to the verb. If it selects the verb, there may be scope problems if more than one adverbial is present in a clause. See Kasper (1993) for a treatment of scrambling of adverbials among complements in a flat structure.

Also note that a sentence like (27) is ruled out in two ways.

(27) *Mary-ka Robin-eykey ku namwu-lul kaci-lul cuessta.
M-nom R-to(dat) the tree-acc branch-acc gave
'Mary gave a branch of the tree to Robin.'

The input lexical entry of the lexical rule in (24) is a strictly transitive verb. This prevents multiple accusatives from occurring when the verb is not a transitive verb, and so (27) is ruled out because the head verb is a ditransitive verb[11].

3.2. 'Local obliqueness-command' (local o-command) and IAP

The lexical rule in (24) immediately raises the following question. It is generally assumed that a constituent which is a complement of a lexical head can be topicalized or relativized (i.e. can be an antecedent of a relative clause gap). If the BP NP is a real complement, how can we explain the fact that the BP NP cannot be topicalized[12] or relativized as illustrated in (12) and (13), repeated as (28) and (29):

(28) a. ??kaci-nun Mary-ka ku namwu-lul calassta.
branch-top M-nom the tree-acc cut
'As for branches, Mary cut the one belonging to the tree.'

b. Ku namwu-nun Mary-ka kaci-lul calassta.
the tree-top M-nom branch-acc cut
'As for the tree, Mary cut its branch.'

---

[11]Carl Pollard (p.c) points out that it is also ruled out on semantic grounds, since giving Robin a branch does not entail giving Robin the tree, and therefore, by (25) the branch cannot be a body part of the tree relative to the giving relation.

[12]Sentence (28a) is acceptible only when it has a contrastive reading: e.g. Mary cut only the branch of the tree, (but not the root).

(29) a. *Mary-ka John-lul capun son
M-nom J-acc hold-MOD hand
'John's hand that Mary is holding'

b. Mary-ka son-lul capun John
M-nom hand-acc hold-MOD J
'Lit. John$_i$ who Mary holds his$_i$ hand=John whose hand is being held by Mary'

My answer to this question is based on the *local o-command* relation defined as follows:

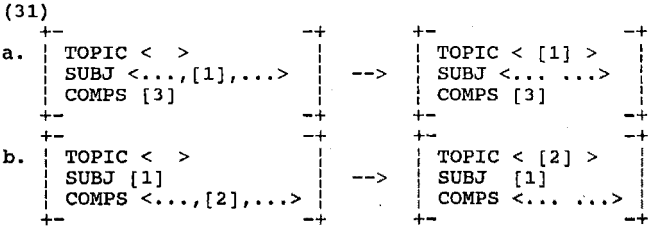
(30) Let Y and Z be *synsem* objects with distinct LOCAL values, Y referential. Then Y *locally o-commands* Z just in case Y is less oblique than Z. (Pollard & Sag (in press):291)

Before explaining the ungrammaticality of (28a), the Korean topicalization construction using the topic marker *(n)un* (the so-called Chinese style topicalization, cf.(28)) needs to be briefly discussed. It has been argued that in languages which do not have syntactic wh-movement, such as Chinese,[13] Korean and Japanese, topicalization has several distinctive properties and needs to be treated differently than in English. (See Xu & Langendoen (1985) for Chinese, Kuno (1973) for Japanese.) Following this line of argument, I assume that Korean also needs an independent node for a topic constituent in which the topic marker *(n)un* is realized. This idea can be incorporated into HPSG by using another list-valued VALENCE feature, called "TOPIC", whose value (if present) is taken as less oblique than the value of the COMPS attribute. (Whether the value of the TOPIC feature is less oblique than that of the SUBJ feature is discussed later on.) For this, I propose the lexical rules shown in (31), which take as input a lexical entry with a certain COMPS or SUBJ list, and return as output a lexical entry which is the same except that one element has been

[13]Carl Pollard (p.c.) points out that for Chinese, it is controversial whether (at least some cases of) topicalization involve wh-movement.

removed from the COMPS or SUBJ list and placed in the TOPIC list. These rules eliminate the need for empty categories such as traces or *pro*.[14]

(31)



Also I suggest a separate Topic-Head Schema (33) for introducing a topic, in addition to the Subjects-Complements-Head Schema (32):

(32) Subjects-Complements-Head Schema

X"[SUBJ< >, COMPS< >] --> [1]Y", [2]Z", X^0[SUBJ [1], COMPS [2]]
SUBJ COMPS HEAD

(33) Topic-Head Schema

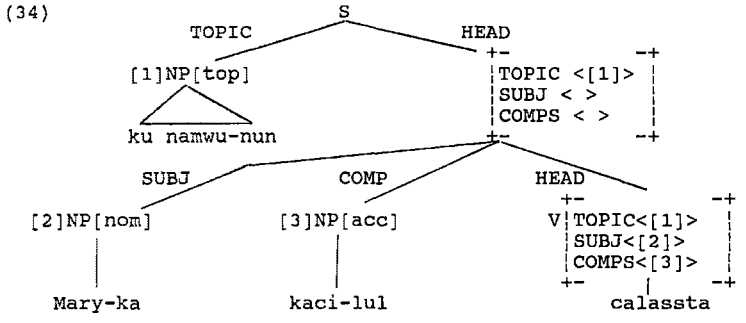
X"[TOPIC< >] --> Y"[1], X"[TOPIC<[1]>, SUBJ< >, COMPS< >]
TOPIC HEAD

Schema (32) differs from the original Subject-Complements-Head Schema in current HPSG which allows only one subject per clause. I assume that more than one subject can occur in a clause in Korean (e.g. (40a)); thus we need (32) to license this multiple subject construction. According to these schemata, the structure of (28b) is (34):

---

[14] I do not follow Xu & Langendoen's (1985) idea that a topic and *pro* in subject or complement position are coindexed, because the existence of the coindexed *pro* violates the HPSG Binding Principles. This problem is pointed out by Andreas Kathol (p.c.).

(34)



Now let's go back to the ungrammaticality of (28a). As argued by Guéron (1985), the referent of a BP NP depends on its PS NP within a local domain: roughly speaking, in order to identify a BP NP, we need to identify its PS NP first. And this referential dependency of the BP NP makes it similar to anaphora even though it differs from real anaphors such as English reflexives: in the case of real anaphora, there is a coindexing relation between the dependent NP and its antecedent, whereas in the case of the body-part relationship, there is no such relation between the BP NP and the PS NP. In spite of this difference, the BP NP has a referential dependency on its PS NP, and I suggest a syntactic restriction on this type of dependency based on the notion of *local o-command* relation as follows:

(35) A BP NP must be locally o-commanded by its PS NP.

Here, which NP is the PS NP of which BP NP is specified in the output lexical entry of the lexical rule in (24): for each body-part *psoa* in the background, the NP corresponding to ARG1 is the body part of the NP corresponding to ARG2.

According to my theory, the valence of the head verb of (28a) is as given in (36). (In this approach, the body-part relations among the NPs are specified in the BACKGROUND value of the output

entry of the IAP lexical rule. I simplify the lexical entry by using subscripts *bp* and *ps* which represent an inalienable body part NP, and its possessor NP, respectively.)

(36)
```
+-                                  -+
| TOPIC <NP_bp::[1]>                 |
| SUBJ <NP::[2]>                     |
| COMPS <NP::[3]_ps>                 |
+-                                  -+
```

Here the overt BP NP *kaci* ('branch') is in the TOPIC list, and it is less oblique than the PS NP in COMPS, and so it fails to be locally o-commanded by its PS NP, violating the restriction in (35). In contrast, the VAL feature of the verb in (28b) is (37):

(37)
```
+-                                  -+
| TOPIC < NP_ps::[1] >               |
| SUBJ < NP::[2] >                   |
| COMPS < NP_bp::[3] >               |
+-                                  -+
```

Here the overt BP NP *kaci* is locally o-commanded by the less oblique PS NP *John* in the TOPIC, and (35) is observed.

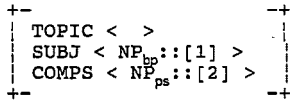
The restriction in (35) also explains why the BP NP cannot be passivized without concomitant passivization of the PS NP, as illustrated in (10) and (11) in section 1.6. On my approach, the passive rule simply says that when the verb has passive morphology, any NPs in COMPS can become elements of SUBJ, and the original subject NP is deleted or realized as a PP[PFORM *uyhayse*] in COMPS. (38) is a repetition of (10) and (11a). The VAL features of the verbs in (38a,b) and (38c) are given in (39a) and (39b), respectively.

(38) a. *Son-i John-lul caphiessta.
hand-nom J-acc be-caught
'John's hand is caught.'

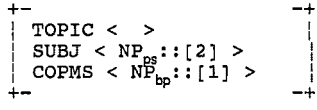
b. *John-lul son-i caphiessta.
J-acc hand-nom be-caught
'John's hand is caught.'

c. John-i son-lul cap-hi-essta.
J-nom hand-acc be-caught
'John's hand is caught.'

(39) a.



b.



In (39a), the BP NP in the SUBJ is not locally o-commanded by its PS NP in COMPS since the NP in SUBJ is less oblique than the NP in COMPS, and (35) is violated. In (39b), by contrast, the BP NP in COMPS is locally o-commanded by a less oblique PS NP in SUBJ, and (35) is observed.

The restriction on the distribution of BP NPs (35) cannot explain the following topicalization data (40b,c) yet, which are produced from (40a). ((40a) is called a "double" or "multiple" subject construction.[15])

(40) a. Mary-ka elkul-i yepputa.
M-nom face-nom pretty
'As for Mary, her face is pretty.'

b. Mary-nun elkul-i yepputa.
M-top face-nom be-pretty
'As for Mary, her face pretty.'

[15]We apparently need another lexical rule (similar to the one for IAP) in order to license this kind of multiple nominative construction, which says that an NP in SUBJ of an intransitive verb can be repeated an arbitrary number of times as long as certain semantic constraints are met. See Park (1988) or B.Kang (1988) for a discussion of the relevant constraints.

c. Elkul-un Mary-ka yepputa.
face-top M-nom be-pretty
'As for the face, Mary's face is pretty.'

(40c) is as good as (40b) in a non-contrastive topic reading. The problem is that the restriction in (35) cannot explain the discrepancy in acceptibility between a sentence like (40c) in which the topic BP NP is a nominative, and a sentence like (28) in which the topic BP NP is an accusative. My account of this asymmetry is couched in terms of the obliqueness ordering between topic (realized with the topic marker *-nun*) and subject (realized by nominative case). Specifically, I hypothesize that a topic and a subject are equally oblique in Korean, since subjects seem to be inherently topic-like in the respect that they set up background information (topic) of a sentence when they occur sentence initially[16]. Moreover, in multiple nominative constructions such as (40a), the first nominative (*Mary*) apparently exhibits topichood because it is what the sentence is about. This intuition of native speakers is reflected in the English translation given in (40a). From these observations, we assume that the subject takes the same place in the obliqueness hierarchy as a topic: the subject and topic are equally oblique. The asymmetry in sentences such as (28) and (40c) can be explained if we slightly revise the definition of local o-command in the following manner, with the obliqueness hierarchy as described above:

(41) Local O-command (weak version)
Let Y and Z be *synsem* objects with distinct LOCAL values, Y referential. Then Y *locally o-commands* Z just in case Y is at least as oblique as Z. (i.e. just in case Y is less oblique than Z or as oblique as Z.)

[16]Gunji (1986) says that both topic and sentence initial subject in Japanese have similar properties except that the topic is used to introduce old information, whereas the subject is used to introduce new information.

In our theory of IAP, (40b,c) are all grammatical because the BP NP *elkul* ('face') and the PS NP *Mary* are equally oblique, *elkul* is locally o-commanded by *Mary*, and restriction (35) is observed.

As just proposed, the obliqueness hierarchy in Korean is as follows: an NP in TOPIC (a topic) or SUBJ (a subject) is less oblique than an NP in COMPS (an object). The next question that may be raised is what the obliqueness hierarchy is among the NPs on the same valence list: e.g. the accusative NPs in COMPS in (26a), or the nominative NPs in SUBJ in (40a). The answer seems to depend on the definition of local o-command. If we used the original definition in (30), there would have to be some way to represent the relative obliqueness among the NPs in the same valence list in order for constraint (35) to work (i.e. not to be violated) in (26a) and (40a). That is, we would have to say that the obliqueness hierarchy among the elements in the same valence list is represented by the relative order of the elements in the list: e.g. a less oblique argument in SUBJ or COMPS must appear to the left of a more oblique one on the COMPS or SUBJ list, respectively. However, when we use the weak version of local o-command definition in (41) instead, it is not necessary to establish a relative obliqueness ordering among the NPs in the same valence list. We can just assume that all the NPs in the same valence list are equally oblique: according to (41), a PS NP can locally o-command an equally oblique BP NP, and (35) is not violated in (26a) and (40a).[17]

---

[17]The PP[*eykey*] which is usually called "indirect object" or "dative NP" needs to be treated as a PP (O'Grady (1987)). The obliqueness ordering between this PP and an (accusative) NP complement is not clear. However, there is evidence the PP seems to be more oblique than the NP for some speakers because the locally bound reflexive *cakicasin* in the PP[*eykey*] can be bound by the NP complement as shown in (i):

(i) Mary-ka (kewul-lo) John-lul$_j$ cakicasin-eykey$_j$ piche-cwuessta.
M-nom mirror-with J-acc self-to mirror-gave
'Lit. Mary mirrored John$_j$ to himself$_j$ (with a mirror).'

However, for some speakers, (i) is not acceptable. For them, the PP seems to be as oblique as the complement NP.

Restriction (35) can also account for all other possibilities of passivization illustrated in (11c), repeated in (42), since the body-part relationship is transitive: if x is a body part of y, and if y is a body part of z, then x is also a body part of z (all relative to a given relation).

(42) a. Ce namwu-ka kaci-ka kkut-i cal-i-essta.
that tree-nom branch-nom end-nom be-cut
'Lit. The end of the branch of that tree was cut.'

b. Ce namwu-ka kaci-lul kkut-lul cal-i-essta.
that tree-nom branch-acc end-acc
'Lit. The end of the branch of that tree was cut.'

c. Ce namwu-ka kaci-ka kkut-lul cal-i-essta.
that tree-nom branch-nom end-acc
'Lit. The end of the branch of that tree was cut.'

d. Ce namwu-ka kaci-lul kkut-i cal-i-essta.
that tree-nom branch-acc end-nom
'Lit. The end of the branch of that tree was cut.'

The relevant parts of the lexical entries for verbs in (42a,b,c,d) are (43a,b,c,d) respectively. Here, NP::[1], NP::[2], and NP::[3] correspond to *ce namwu* ('that tree'), *kaci* ('branch'), and *kkut* ('end'), respectively. Note that NP::[2] is a body part of NP::[1], and NP::[3] is a body part of NP::[2], and so NP::[3] is also a body part of NP::[1].

(43) a.
```
+-                                          -+
| TOPIC <  >                                 |
| SUBJ <NP::[1], NP::[2], NP::[3]>           |
| COMPS <  >                                 |
+-                                          -+
```

b.
```
+-                                  -+
| TOPIC <  >                        |
| SUBJ <NP::[1]>                    |
| COMPS <NP::[2], NP::[3]>          |
+-                                  -+
```

c.
```
+-                                -+
| TOPIC <  >                      |
| SUBJ <NP::[1], NP::[2] >        |
| COMPS <NP::[3]>                 |
+-                                -+
```

d.
```
+-                                -+
| TOPIC <  >                      |
| SUBJ <NP::[1], NP::[3]>         |
| COMPS <NP::[2]>                 |
+-                                -+
```

(43a) shows that all the NPs in COMPS are passivized "into" SUBJ. Here NP::[3] is locally o-commanded by its PS NP::[1] and NP::[2]; and NP::[2] too is locally o-commanded by its PS NP::[1]. (43b) shows that only NP::[1] is passivized into SUBJ. Here, NP::[2] and NP::[3] are locally o-commanded by their PS NP::[1]; and NP::[3] is also locally o-commanded by its PS NP::[2]. (43c) shows the case in which only NP::[1] and NP::[2] are passivized into SUBJ. Here, NP::[3] is locally o-commanded by its PS NP::[1] and NP::[2]; and NP::[2] is also o-commanded by its PS NP::[1]. (43d) finally illustrates the case in which only NP::[1] and NP::[3] are passivized into SUBJ. Here, NP::[3] is o-commanded by its PS NP NP::[1]; and NP::[2] is also o-commanded by its PS NP::[1]. Therefore, all the lexical entries in (43) observe the restriction in (35), and the grammaticality of (42) is naturally explained.

My analysis also predicts that we should be able to topicalize out of the SUBJ list in a sentence like (42a), which has multiple subjects through passivization, and this prediction is borne out considering (44a,b):

(44) a. Kaci-nun ce namwu-ka kkut-i cal-i-essta.
branch-top that tree-nom end-nom be-cut
'Lit. The end of the branch-[topic] of that tree was cut.'

b. Kaci-nun ce namwu-ka kkut-lul cal-i-essta.
branch-top that tree-nom end-acc
'Lit. The end of the branch-[topic] of that tree was cut.'

c. #Kkut-un ce namwu-ka kaci-ka cal-i-essta.
end-top that tree-nom branch-nom
'Lit. The end-[topic] of the branch of that tree was cut.'

d. #Kkut-un ce namwu-ka kaci-lul cal-i-essta.
end-top that tree-nom branch-acc
'Lit. The end-[topic] of the branch of that tree was cut.'

Sentences (44c,d) are not counterexamples to my analysis because their awkwardness seems to be due to the fact that it is very hard to use *kkut* ('end') as a topic: it is very hard to think any situation in which BP NPs such as *kkut* is used as a noncontrastive topic.

The grammaticality of a sentence like (5b) in which the reversed linear order of the BP NP and its PS NP is licensed by focus falls out naturally from my analysis. A.H. Kim (1985) argues that a focused category tends to immediately precede a verb in a clause in Korean. However, we can assume that focusing does not change the grammatical status of the focussed category. Restriction (35) is not violated in (5b) since the restriction makes reference to the obliqueness hierarchy of the arguments, rather than configurational notions, or linear order. That is, in (5b), even though the PS NP *John* follows the BP NP *son* ('hand') on the surface, the BP NP is still as oblique as its PS NP in the representation of the verb's valence. This is different from the cases of topicalization or passivization mentioned above where we find a change in the obliqueness of the arguments. The lexical entry of the verb of (5b) is (45), which is also the lexical entry for the verb of the corresponding sentence displaying canonical word order.

(45)

TOPIC < >
SUBJ < NP::[1] >
COMPS < NP_{ps}::[2], NP_{bp}::[3] >

Here, the BP NP is locally o-commanded by an equally oblique PS NP, and restriction (35) is observed.

Note that (28a) is grammatical if it is interpreted as having a contrastive reading. The contrastive topic or focus is different from the ordinary topic in that it results from attaching the marker *-nun* on any expression without changing its grammatical relation, and thus without changing its obliqueness. So, in this reading, the grammatical relation of the BP NP in (28a) is a simple complement suffixed with *-nun*, which is scrambled into the first position of a sentence. In this case, the lexical entry of the head verb is basically the same as (45), and the restriction in (35) is observed.

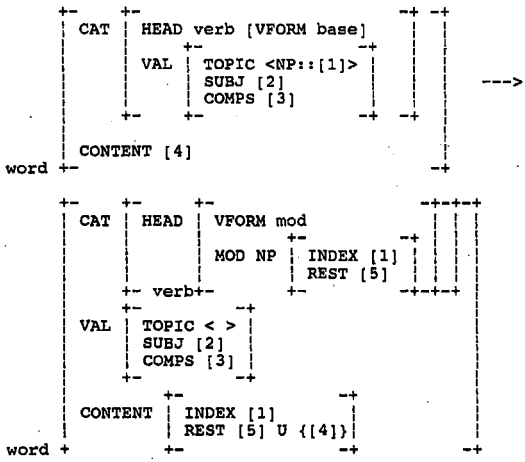
Now let us consider the lack of relativizability of the BP NP as illustrated in (29a). On my analysis, this fact is also related to restriction (35). According to Kuno (1973), Chinese-style topicalization (thematization in Kuno's terms) and relativization are correlated, and share certain syntactic properties: e.g. deletability of case-particles; permission of resumptive (reflexive) pronouns; and extractability out of adverbial clauses, complex NPs, and sentential subjects.[18]

If we accept the premise that this correlation really holds, the reason for the lack of relativizability of the BP NP may be the same as that for the lack of topicalizability of the BP NP. In Korean, the relativizer *-(n)un* is an inflectional morpheme, and it attaches to a verb. Andreas Kathol (p.c.) suggests that a straightforward way to handle this construction in the HPSG framework may be to assume a lexical rule which changes the valence feature and verb form. Following his suggestion, I propose the lexical rule in (46) to obtain verbs in their modifier form with suffix *-(n)un* (i.e. VFORM *mod*).

---

[18]J.H. Yoon (1993) provides some counterexamples for this assertion which I cannot discuss in this paper in detail. If the account of relativization sketched below turns out to be untenable, we will need a different account of the lack of relativization of the BP NP.

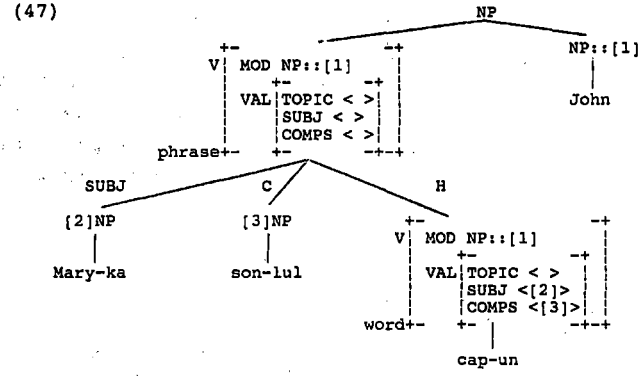
(46) Lexical Rule for a Verbal Modifier



Lexical rule (46) takes as input a verb of a base form which has an NP in the TOPIC list, and returns as output a verb of a modifier form which selects as a "modifyee" (represented by MOD) an NP sharing the index of the topic NP in the input verb.

The structure of (29b) is (47) in our analysis.

(47)



In the lexical entry for the head verb *capun*, [3] is a BP NP, but its PS NP (NP::[1]) does not exist within the same valence (VAL) attribute. In this case, the sentence is grammatical because the BP NP is exempted from constraint (35).

In the present analysis of relative constructions, the sentence in (29a), which is ungrammatical, is not licensed because the input lexical entry in (48a) violates restriction (35): the BP NP *son* ('hand') in TOPIC cannot be locally o-commanded by the PS NP *John* in COMPS. In contrast, (29b) is grammatical since the BP NP *son* in COMPS is locally o-commanded by the PS NP *John* in TOPIC in input lexical entry (48b).

(48) a.

TOPIC < NP_{bp}::[1] >
SUBJ < NP::[2] >
COMPS < NP_{ps}::[3]

b.

TOPIC < NP_{ps}::[1] >
SUBJ < NP::[2] >
COMPS < NP_{bp}::[3] >

My theory predicts that relativization of a BP NP out of a multiple subject construction is possible because the argument that can be topicalized can also be relativized (cf. (40)). As illustrated in (49c), however, the relativization of a BP NP in a multiple subject construction results in an awkward sentence.

(49) a. Mary-ka elkul-i yepputa.
M-nom face-nom be-pretty
'As for Mary, her face is pretty.'

b. elkul-i yeppu-n Mary
face-nom be-pretty-MOD M
'Mary whose hace is pretty'

c. #Mary-ka yeppu-n elkul
M-nom be-pretty-MOD face
'Lit. the pretty face which Mary has'

According to Kuno (1973), the awkwardness of sentences such as (49c) is due to another independently motivated restriction on relativization of a generic NP: one rarely characterizes something generic by some specific event or state. For example, in (49c), one does not characterize faces in general as something such that a certain person is pretty. However, in certain contexts, this sentence becomes better: in a context in which Mary and John are a couple, and Mary is pregnant, the acceptibility of sentence (49c) is improved if appropriate focal stress is given to the BP NPs.

(50) ?Mary-ka yeppu-n ELKUL-kwa John-i thunthunha-n
M-nom be-pretty-MOD FACE-and J-nom be-healthy-MOD

MOM-lul talmnunta-myen, mescin aki-ka thayenalkesita.
body-acc resemble-if nice baby-nom will-be-born

'If (the baby) resembles Mary's pretty face and John's healthy body, a nice baby will be born.'

This kind of improvement of acceptibility is not observed in a sentence in which the relativized BP NP is a complement. (51a) is one such example. In (51b), the PS NP is relativized, and it is a little awkward for the semantic reason mentioned above. In (51c), the BP NP is relativized, and it is bad.

(51) a. Mary-ka America-lul California-lul pangmwunhaessta.
M-nom America-acc California-acc visited
'Mary visited California in America.'

b. #Mary-ka California-lul pangmwunha-n America
M-nom California-acc visited-MOD America
'America one of whose parts is California which Mary visited'

c. *Mary-ka America-lul pangmwunha-n California
M-nom America-acc visited-MOD California
'California which belongs to America which Mary visited'

Note that the acceptibility of (51b) improves a lot in certain contexts, as illustrated in (52a). However, this improvement is not

allowed in the case of (51c), as illustrated in (52b):

(52) a. Mary-ka California-lul pangmwunha-n AMERICA-wa
M-nom California-acc visited-MOD America-and

Paris-lul pangmwunha-n FRANCE-nun
Paris-acc visited-MOD France-top

na-to kapoko-siph-un kos-ita.
I-also go-want-to-MOD place-be

'As for America- Mary visited California- and France- she visited Paris, they are places that I also want to go to.'

b. *Mary-ka America-lul pangmwunha-n CALIFORNIA-wa
M-nom America-acc visited-MOD California-and

France-lul pangmwunha-n PARIS-nun
France-acc visited-MOD Paris-top

na-to kapoko-siph-un kos-ita.
I-also go-want-to-MOD place-be

'As for California which belongs to America that Mary visited and Paris which belongs to France that Mary visited, they are the places that I also want to visit.'

The lack of improvement of (51c) can be explained by constraint (35). On our analysis, (51c) cannot be licensed because the input entry of the lexical rule for a verbal modifier violates syntactic constraint (35). Therefore even a specific context cannot improve its acceptibilty, as illustrated in (52b). In contrast, (51b) is licensed because the input entry does not violate constraint (35). Here, the awkwardness is semantic or pragmatic, rather than syntactic. Therefore an appropriate context improves its acceptibility, as illustrated in (52a).

3.3. "Long Distance Scrambling" and IAP

In this section, I consider the case where the topic in an embedded clause is topicalized into the main clause, which may

prove problematic for my lexical approach. I give examples in (53):

(53) a. ??Kaci-nun [Mary-ka [John-i ku namwu-lul
branch-top M-nom J-nom the tree-acc

___ calasstako] mitessta]
cut believed

'As for the branch, Mary believed John cut the one of the tree.'

b. Ku namwu-nun [Mary-ka [John-i ___ kaci-lul
the tree-top M-nom J-nom branch-acc

calasstako] mitessta]
cut believed

'As for the tree, Mary believed that John cut its branch.'

Several different approaches to scrambling are suggested in different theories: e.g. Mahajan (1990), Reape (1990), Saito (1985, 1992), among others. I cannot discuss all of the main issues in scrambling in detail here since it is far beyond the scope of this paper. I just want to consider two possible approaches to "long distance scrambling": roughly, an unbounded dependency approach which is analoguous to the A'-movement approach in Mahajan (1990) and Saito (1985); and a word order variation approach based on word order domain theory in Reape (1990).

First, I want to consider an unbounded dependency approach which uses the SLASH feature. This approach assumes that there are at least two types of topicalization in Korean and Japanese: the Chinese-style topicalization mentioned already in section 3.2 and the English-style topicalization in which a filler-gap relationship exists between a topic (or filler) and its empty category. Following the current HPSG framework (Ch.9 in Pollard & Sag (in press)), we may assume that any element of a valence feature (TOPIC, SUBJ, or COMPS) can be an element of the nonlocal feature SLASH by the same lexical rule mechanism used in the analysis of English topic constructions, and that this SLASH element is

identical to (the LOCAL value of) the filler licensed by the Filler-Head Schema. To explain (53) in this framework, I also need to assume that the element in SLASH is less oblique than those in any of the valence features TOPIC, SUBJ, and COMPS. In this approach, the verb's lexical entries occurring in the embedded clause in (53a) and (53b) are (54a) and (54b), respectively. Here, NP::[1], NP::[2], and NP::[3] correspond to *John-i*, *ku namwu-lul*, and *kaci-lul*, respectively:

(54) a.

LOCAL	VAL | TOPIC < > SUBJ <NP::[1]> COMPS <NP_{ps}::[2]>
NONLOCAL	SLASH {NP_{bp}::[3]}

b.

LOCAL	VAL | TOPIC < > SUBJ <NP::[1]> COMPS <NP_{bp}::[3]>
NONLOCAL	SLASH {NP_{ps}::[2]}

In (54a), restriction (35) is violated since the BP NP *kaci-lul* is less oblique than the PS NP *ku namwu-lul*, and cannot be locally o-commanded by the PS NP. In contrast, in (54b), restriction (35) is observed since the BP NP *kaci-lul* is more oblique than PS NP *ku namwu-lul*, and is locally o-commanded by the PS NP.

This approach leads to a problem of spurious ambiguity[19]. While a mechanism such as SLASH percolation is meant to account for unbounded dependencies, there is nothing prima facie that would prevent it from being used in a strictly local way, i.e. within a single clause. Therefore, the position of the object NP in a

[19]This difficulty was pointed to me by Carl Pollard (p.c.).

simplex sentence such as (55) could be analyzed either in terms of a filler-gap relationship or simply as one permissible word order (scrambling).[20]

(55) Sakwa-lul Mary-ka mekassta.
apple-acc M-nom ate
'Mary ate an apple.'

The second problem for this approach is its stipulativeness: it needs to assume that SLASH participates in the obliqueness hierarchy in spite of the fact that nonlocal features are usually assumed to have nothing to do with the obliqueness hierarchy.

A totally different approach which avoids the above-mentioned problems is possible if we adopt the word order domain theory suggested by Reape (1990) or the minimalist theory in Dowty (1990): "long distance scrambling" in Korean and Japanese is due to general word order variation among the "word order domain elements" associated with a matrix clause and embedded clause, rather than due to an unbounded dependency mechanism. Reape's (1990) main idea is roughly as follows. Each combination of a head daughter and non-head daughter(s) which have their own word order domain yields a bigger word order domain which includes the word order domains of the head and non-head daughter(s). That is, the element(s) in the word order domains of a head and non-head daughters become the elements in the mother's order domain. One universal condition on the merging of word order domains is as follows: if elements x and y in a daughter's word order domain have a certain ordering relation, then the ordering relation holds on all domains to which

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[20]We need to assume that topicalization via SLASH allows accusative case (*-lul*) or nominative case (*-ka*) as well as topic case (*-nun*) because the NP extracted out of an embedded clause can be accusative or nominative:

(i) Sakwa-lul Sue-ka [S Mary-ka ___ mekesstako] malhayssta.
apple-acc S-nom M-nom ate said
'Sue said that Mary ate an apple.'

x and y belong. (I.e. the domains that x and y originally belong to are sequence-unioned.)

In this approach, the lexical entries of the verbs in the embedded clause in (53a,b) are the same as those of the verbs in (28a,b), repectively, which are (36) and (37). Therefore, the (un)grammaticality of (53) is explained by restriction (35) which is used to explain the (un)grammaticality of (28). The only difference between the sentences in (28) and (53) is that, in the case of (53), the subject of the matrix clause occurs between the topic and the subject of the embedded clause in the word order domain of the matrix clause.

One of the problems of this approach is that it is hard to prevent overgeneration. It includes a mechanism which says that any constituents in an embedded clause can be mixed with any constituents in a main clause as long as word orders in each word order domain is maintained. However, this kind of scrambling produces ill-formed sentences such as (56b) (cf.(56a)):

(56) a. Mary-nun Kim-eykey [$_S$ Sue-ka ku namwu-lul
M-top K-to S-nom the tree-acc

callasstako] malhayssta.
cut said

'Mary said to Kim that Sue cut the tree.'

b. *Mary-nun Sue-ka Kim-eykey ku namwu-lul
M-top S-nom K-to the tree-acc

callasstako malayssta.
cut said

To salvage this idea of long distance scrambling, we may need some constraint which eliminates ill-formed sentences like (56b), but allows well-formed sentences like (53b). This constraint seems to be a very complicated matter, and presently I do not know how it should be formulated without ad hoc stipulations.

For the time being, I leave as a problem for further studies

the question of which approach is better for dealing with extraction out of embedded clauses.

3.4 Case Assignment

So far I have not mentioned any case assignment mechanism for PS NP and BP NP. The case assignment in IAP is not different from that in any other Korean construction. From the HPSG point of view, case theory in Korean needs to be treated differently from that of English inasmuch as the case of an NP in Korean is not always assigned lexically. (See Yoo 1992.) I do not want to discuss the case assignment mechanism in detail here, but the rough idea is as follows. The default cases of the topic daughter, subject daughter, and complement daughter are topic (realized as *nun*), nominative (realized as *ka* or *i*), and accusative (realized as *lul*), respectively, unless the verb specifies them differently as in the case of emotional verbs: an emotional verb assigns nominative case to its complement. If we assume this case assignment mechanism in Korean, then multiple accusatives as in (1) and (2), or multiple nominatives in a passive of IAP as in (11), or the topic case like (28) are straightforwardly explained.

4. Conclusion

In this paper, I have suggested a new treatment of Korean IAP. The first section is concerned with the properties of Korean IAP. Here, I provided some new data, and pointed out some flaws in the interpretation of the data in current analyses. The important points that I have made are: (i) the linear order between a PS NP and BP NP can be reversed when the PS NP is focussed; (ii) the notion of physical affectedness needs to be replaced by a constraint based on semantic entailment given in (25); and (iii) passivization of the BP NP is possible as long as the PS NP is passivized.

In section 2, I reviewed three different types of approaches to Korean IAP, and showed how all of them are problematic. The main points that I made here are: (i) the BP NP cannot be considered an adjunct; (ii) the lack of topicalizability or relativizability of the BP NP does not allow us to conclude that it is an N'; and (iii) the BP NP cannot be considered to be incorporated into the head verb even at LF.

In section 3, I suggested a lexical approach to IAP. One of the main suggestions here is a lexical rule for IAP which can license any number of the BP NP complements as long as the semantics is compatible with them. Through this lexical rule, I can assume a flat structure analysis of IAP, and explain scrambling in a restricted way. I also have suggested a restriction on the distribution of BP NPs based on the notion of local o-command, and shown how this can account for the facts about passivizability, and the lack of topicalizability/relativizability of the BP NP.

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